

# Work Order ID 66656



Page 1

Wednesday, February 23, 2011 1:10:15 PM

Item ID: D3624-2

Accept



Setup Start



Revision ID:

Stop



Item Name: Bubble Window

Start Date: 2/23/2011 Start Qty: 2.00



Cust Item ID:

Required Date: 3/4/2011 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: CL Date: 11/02/23 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
<b>Draw Nbr</b>	<b>Revision Nbr</b>								
D3624	Rev D								
100		0.00							
	HAND FINISHING THERMOFORMING					x3			OK 11/03/01
Thermoform	<b>Memo</b>	0.00							
Thermoforming Machine	Cut Blanks to 32.5" by 48"								
110		0.00							
	THERMOFORMING MACHINE					x2	x1		OK 11/03/01 PTO →
Thermoform	<b>Memo</b>	0.00							
Thermoforming Machine	Thermoform as per Dwg. D3624 and Folio FTA 004 <input type="checkbox"/> Dwg. Rev. <u>D.</u> <input type="checkbox"/> Folio Rev. <u>D.</u>								
120		0.00							
	QC2- Inspect parts off machine FAI/FAIB					x2			OK 11/03/01
QC	<b>Memo</b>	0.00							
Quality Control	Check Surface finish for undesired marks, voids, dimples etc. Check depth of bubble to ensure conformity to drawing tolerances.								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3624-2 PAR #: \_\_\_\_\_ Fault Category: Thermo forming NCR: Yes No DQA: \_\_\_\_\_ Date: 11/03/16  
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: OK Date: 11/03/17

NCR: <u>66656</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11/03/01	110	1 Part did not form properly. forgot billow switch	<u>11.03.15</u> <u>05042</u>	Scrap 1 part & replace ensure billow switch is on.	<u>Wh</u> <u>11/03/01</u>	<u>S</u> <u>11/03/15</u>	<u>11.03.15</u>	<u>S</u> <u>11/03/11</u>
		R.T. operates error step up wasn't complete R.C.L.O.A.						<u>S</u> <u>11/03/14</u>

NOTE: Date & initial all entries

**Work Order ID 66656**

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Start Date: 2/23/2011 Start Qty: 2.00



Cust Item ID:

Required Date: 3/4/2011 Req'd Qty: 2.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

0.00



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

x 2

Dh  
11/03/14

Thermoforming Machine

- 1) Trim to Finished Dimensions
- 2) Buff out any light scratches or blemishes
- 3) Etch in part number and batch number

140

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

x 2

Dh  
11/03/14

Quality Control

150

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Sulorley

(x 2)

(4)

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Item Name: Bubble Window

Start Date: 2/23/2011 Start Qty: 2.00



Cust Item ID:

Required Date: 3/4/2011 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Identify as per dwg & Stock Location: _____	0.00							
	Packaging								
Packaging	Memo PPI 66656	0.00							
170	QC21- Final Inspection - Work Order Release	0.00							
	QC								
Quality Control	Memo	0.00							

4/3/15 (2)

11/3/16

CL 11/03/15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Wednesday, February 23, 2011 1:10:11 PM

Page 1

Work Order ID: 66656



Parent Item: D3624-2



Parent Item Name: Bubble Window

Start Date: 2/23/2011

Required Date: 3/4/2011

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP A Thermoform in house 6/27/2007 DL  
 IPP B. Revised due to corrupt operating Program. 7/23/2007 DL  
 IPP C. Dwg. Rev. change 7/30/2007  
 IPP D. Dwg. Rev. Updated 4/25/2008 verified by:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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MACRYLICS.177		Purchased	No				sf	171.8722		22.58129			
---------------	--	-----------	----	--	--	--	----	----------	--	----------	--	--	--



0.177" PLEXIGLAS G CLEAR CAST ACRYLIC SHEET

Location

Loc Qty

Loc Code

therm

171.8722

116564

34.37

137.5022

1116796

22.58

+ 11.29

Sh.  
11/03/16.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

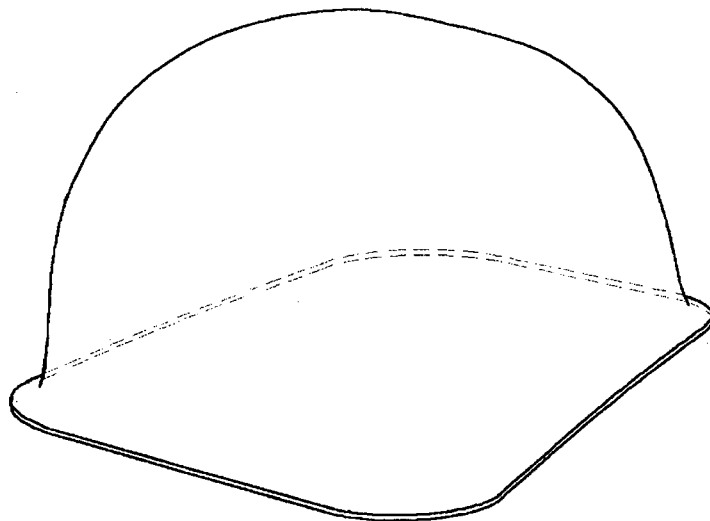
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





D3624-2 BUBBLE WINDOW

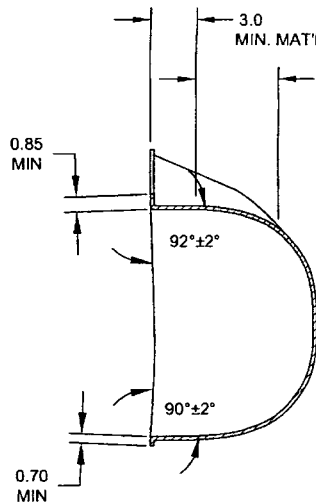
**NOTES:**

- 1) MATERIAL: PLEXIGLAS G CLEAR CAST ACRYLIC SHEET PER LP-391 TYPE 1 GRADE C  
OR POLYCAST II CLEAR ACRYLIC SHEET PER MIL-P-5425  
0.177 TO 0.188 THICK (STOCK, REF DART SPEC M-ACRYLIC-S)
  - 2) FINISH: NONE
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.010 TO 0.020 MAX
  - 6) IDENTIFICATION: ENGRAVE P/N & B/N ON FLANGE WITHIN 0.25" OF BUBBLE. USE 0.125" LETTERS TO MAX DEPTH OF 0.005".
  - 7) WEIGHT: 2.95 lbs
  - 8) FORM PER DT8953 AND QSI 022
- FORMING PROCESS: (a) DRAPE OVER DT8953 MOLD  
(b) HEAT TO 290°F  
(c) VACUUM FORM TO SPECIFIED HEIGHT  
(d) LET COOL TO AT LEAST 100°F BEFORE HANDLING  
(e) TRIM FLANGE USING DT8954

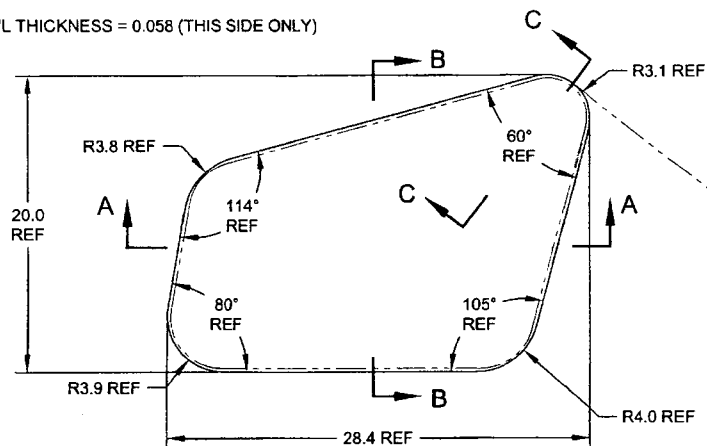
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SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 66656  
C211/02123

D	REDRAW, REFORMAT, RMV SHAPE TOOL, ADD SEC B-B (2C8) & C-C (2C3), ADD FLANGE & WALL & WALL ANGLE DIMS, UPDATE MATL SPEC (1B8)	CP	08.03.12
C	ADD TOOL TO CONTROL BUBBLE SHAPE	CP	07.06.27
B	11.0" DEPTH WAS 12.0"	CP	07.05.24
A	NEW ISSUE	CP	07.06.27
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.03.12		

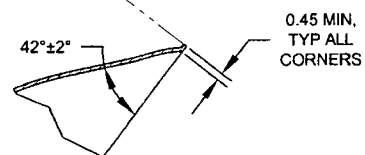
<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA			
DRAWING NO.	D3624	REV. D	
TITLE	BUBBLE WINDOW (A119)	SCALE	NTS
<small>COPYRIGHT © 2007 BY DART AEROSPACE LTD  THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>			



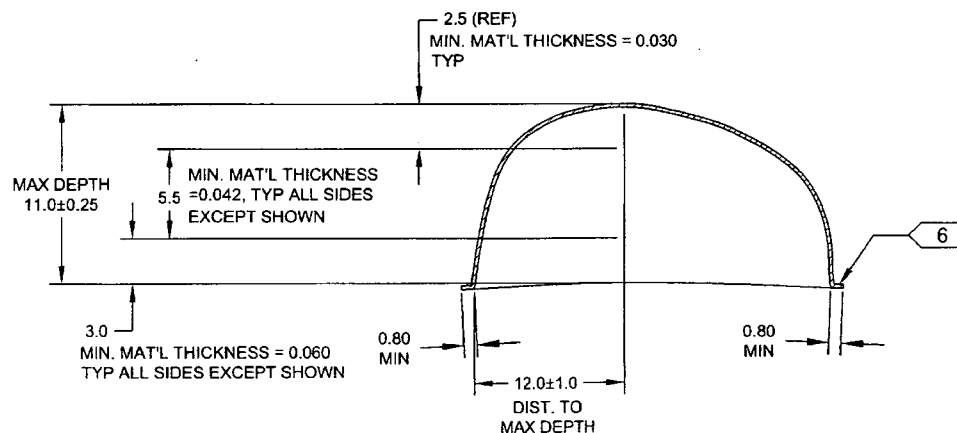
SECTION B-B



D3624-2 BUBBLE WINDOW



SECTION C-C



SECTION A-A

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WITHOUT NOTICE  
WORK ORDER  
66656

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D3624	REV. D
MFG. APPR.			SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		BUBBLE WINDOW (A119)	NTS
DATE	08.03.12	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

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<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	46656
<b>Description:</b> Bubble Window (A119)		<b>Part Number:</b>	D3624-2
<b>Inspection Dwg:</b> D3624	<b>Rev:</b> D	<b>Page 1 of 1</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

### THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Bubble Depth within tolerance	✓			
Shape Definition	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by: Dh Date: 11/03/01

### TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
11.0	+/-0.25	11.0"	✓		TAPE DL-01	
3.0	0.095 Min	0.101"	✓		ULTRA	
8.5	0.058 Min	0.074"	✓		ULTRA	
3.0	0.060 Min	0.093	✓		ULTRA	
8.5	0.042 Min	0.069"	✓		ULTRA	
2.5	0.030 Min	0.058"	✓		ULTRA	
92°	+/-0.2° Min	92°			CAF EX526	
90°	+/-0.2° Min	90°			CAF EX526	
0.85	Min	0.937"	✓		Vern DL-02	
0.70	Min	0.72"	✓		Vern DL-02	

Measured by: Dh Date: 11/03/01

Audited by: B Date: 11/03/01

Prototype Approval: \_\_\_\_\_ Date: \_\_\_\_\_

Rev	Date	Change	Revised by	Approved
A	08.11.28	New Issue	KJ/DL	<u>[Signature]</u>